Use Attainability Analysis

for

WBID 0136 Reese Fork

Submitted by SES, Inc.

To Missouri Department of Natural Resources Water Protection Program

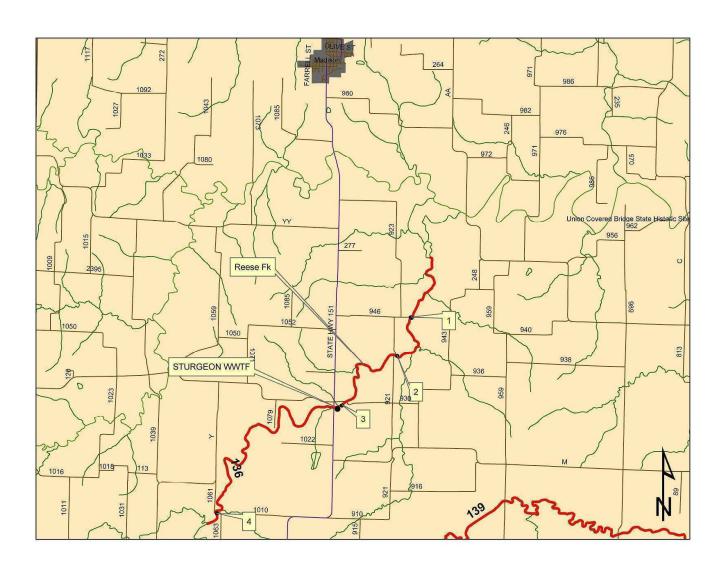
Date Received: June 3, 2007

#### Field Data Sheets for Recreation Use Stream Surveys Data Sheet A - Water Body Identification

(For water body being surveyed)

### **Water Body Information**

Water Body Name: Reese F	ork	WBID:	130	6
8 digit HUC code: 0711000	06	County:	Monroe	
Upstream Legal Description	53N 12W 28			
Downstream Legal Description	54N 11W 31			
Number of Sites Evaluated	4			
List all site numbers, listed upst	ream to downstream			
4,3,2,1				
Disabaggar Facility Information				
Discharger Facility Information				
Discharger Facility Name(s):	Sturgeon WWTF			
Discharger Permit Number(s):	MO0052027			
UAA Surveyor				
Name of Surveyor: Gilisa G	ould	Telephon	e Number:	(913)307-0054 ext. 19
Organization/Employer: SES, I	nc.			
Position: Field Team Leader				
0.		<b>5</b> .		
Signed:		Date	e:	



WBID 136 Site # 1

Date and Time: 5/30/2007 9:00

Current Weather Conditions cloudy

Weather Conditions for Past 10 days: 1.19 inches rainfall

Drought Conditions? No

Site Location (e.g. road crossing)

At county road 946 crossing

GPS Mark: 31

Upstream Photo 17 Downstream Photo 18

Uses Observed (Uses actually observed at time of survey) Circle

Swimming Skin Diving SCUBA diving Tubing

Water Skiing Wind Surfing Kayaking Boating

Wading Rafting Hunting Trapping

Fishing None of the Above Other

**Surrounding Conditions** 

City/county parks Playgrounds MDC conservation lands Urban areas

Campgrounds Boating accesses State parks National Forests

Nature trails Stairs/walkway No trespass sign Fence

Steep slopes None of the Above Other

**Indications of Human Use** 

Roads Rope swings Foot paths/prints Dock/platform

Picture 19

Livestock Watering RV/ATV Tracks Camping Sites Fire pit/ring

NPDES Discharge Fishing Tackle Other:

<b>WBID #</b> 136	3	Site #	1				
Mark # 31			d Oxygen (p				
Upstream Views Phy	sical Dime	ensions:	Is there a	ny water	present at this view?	yes	
			If so, is the	ere an ob	vious current?	no	
Select one of the fol			res:				
% of Char	nnel Feature 0	9	1	T	<del></del>	$\neg$	
Run	0			+	+		
Pool	100						
Downstream View's Physical Dimensions: Is there any water present at this view?  If so, is there an obvious current?							
Substrate:							
0% Cobble	40% Grav	el	60% Sand		0% Silt		
0% Mud/Clay	0% Bedro	ck					
Aquatic Vegetation:	(Note amo	unt of vege	n/a	lgal grov	vth at the assessment	site)	
Water Characteristic	s						
Odor	Sewage	Musky	Chemical	None	Other		
Color	Clear	Green	Gray	Milky	Other : Red\brown		
Bottom Deposit	Sludge	Solids	Fine Sed.	None	Other		
Surface Deposit	Oil	Scum	Foam	None	Other		

WBID 136 Site # 2

Date and Time: 5/30/2007 9:45

Current Weather Conditions cloudy

Weather Conditions for Past 10 days: 1.19 inches rainfall

Drought Conditions? No

Site Location (e.g. road crossing)

At County Road 921 crossing

GPS Mark: 33

Upstream Photo 22 Downstream Photo 23

Uses Observed (Uses actually observed at time of survey) Circle

Swimming Skin Diving SCUBA diving Tubing

Water Skiing Wind Surfing Kayaking Boating

Wading Rafting Hunting Trapping

Fishing None of the Above Other

**Surrounding Conditions** 

City/county parks Playgrounds MDC conservation lands Urban areas

Campgrounds Boating accesses State parks National Forests

Nature trails Stairs/walkway No trespass sign Fence

Picture 21

Steep slopes None of the Above Other

**Indications of Human Use** 

Roads: Picture 20 Rope swings Foot paths/prints Dock/platform

Livestock Watering RV/ATV Tracks Camping Sites Fire pit/ring

NPDES Discharge Fishing Tackle Other:

	36 33 hysical Dime		Oxygen (p Is there ar	pm)	5.3 present at this		yes	
			If so, is the	ere an obv	vious current?		no	
Select one of the fo	ollowing cha annel Feature		es:				_	
Riffle	18 0							
Run Pool	82						1	
Downstream View's Physical Dimensions: Is there any water present at this view?  If so, is there an obvious current?								
							]	
Substrate: 35% Cobble								
00/ 14 1/01	JE0/ D I	.1	1		-		-	
Aquatic Vegetation: (Note amount of vegetation or algal growth at the assessment site)  Vegetation enchroachment from bank into stream around 40%								
Water Characteristics								
Odor	Sewage	Musky	Chemical	None	Other			
Color	Clear	Green	Gray	Milky	Other			
Bottom Deposit	Sludge	Solids	Fine Sed.	None	Other			
Surface Deposit	Oil	Scum	Foam	None	Other			

WBID 136 Site # 3

Date and Time: 5/30/2007 10:20

Current Weather Conditions cloudy, sprinkling

Weather Conditions for Past 10 days: 1.19 inches rainfall

Drought Conditions? No

Site Location (e.g. road crossing) at county road 930 crossing

GPS Mark: 34

Upstream Photo 25 Downstream Photo 26

Uses Observed (Uses actually observed at time of survey) Circle

Swimming Skin Diving SCUBA diving Tubing

Water Skiing Wind Surfing Kayaking Boating

Wading Rafting Hunting Trapping

Fishing None of the Above Other

**Surrounding Conditions** 

City/county parks Playgrounds MDC conservation lands Urban areas

Campgrounds Boating accesses State parks National Forests

Nature trails Stairs/walkway No trespass sign Fence

Steep slopes None of the Above Other

**Indications of Human Use** 

Roads Rope swings Foot paths/prints Dock/platform

Livestock Watering RV/ATV Tracks Camping Sites Fire pit/ring

Picture 24

NPDES Discharge Fishing Tackle Other:

WBID # Mark # Upstream	136 34 Views Phy			3 Oxygen (p Is there ar	pm)	6.7 present at this		yes	
				If so, is the	ere an obv	ious current?		no	
Select one	Select one of the following channel features:  % of Channel Feature								
Riffle		18							
Run Pool		82							
Downstream View's Physical Dimensions: Is there any water present at this view?  If so, is there an obvious current?									
Substrate:  0% Cobble   100% Gravel   0% Sand   0% Silt							[		
0% Mud/Cl	ay	0% Bedro	ck	]					
Aquatic Ve	egetation:	(Note amo	unt of vege	tation or al	gal grow	th at the asse	essment sit	te)	
Aquatic Vegetation: (Note amount of vegetation or algal growth at the assessment site)  spike rush, pi weed, and duckweed along edges and creeping into water									
Water Characteristics									
Odor		Sewage	Musky	Chemical	None	Other			
Color		Clear	Green	Gray	Milky	Other			
Bottom Dep	oosit	Sludge	Solids	Fine Sed.	None	Other			
Surface De	posit	Oil	Scum	Foam	None	Other			

WBID 136 Site # 4

Date and Time: 5/30/2007 11:15

Current Weather Conditions cloudy

Weather Conditions for Past 10 days: 1.19 inches rainfall

Drought Conditions? No

Site Location (e.g. road crossing)

At county road 1010 crossing

GPS Mark: 35

Upstream Photo 27 Downstream Photo 28

Uses Observed (Uses actually observed at time of survey) Circle

Swimming Skin Diving SCUBA diving Tubing

Water Skiing Wind Surfing Kayaking Boating

Wading Rafting Hunting Trapping

Fishing None of the Above Other

**Surrounding Conditions** 

City/county parks Playgrounds MDC conservation lands Urban areas

Campgrounds Boating accesses State parks National Forests

Nature trails Stairs/walkway No trespass sign Fence

Steep slopes None of the Above Other

**Indications of Human Use** 

Roads Rope swings Foot paths/prints Dock/platform

Livestock Watering RV/ATV Tracks Camping Sites Fire pit/ring

NPDES Discharge Fishing Tackle Other:

Picture 29

Mark # 35	5	Dissolved	l Oxygen (p	pm)					
<b>Upstream Views Phy</b>	<b>Upstream Views Physical Dimensions:</b> Is there any water present at this view?								
			<b>ABOVE B</b>	ASE FLO	W				
			If so, is the	ere an obv	vious current?				
	Select one of the following channel features:								
% of Chan	nel Feature	1							
Riffle									
Run									
Pool									
Downstream View's	Physical D	imensions	: Is there an	ıy water p	resent at this	view?			
			If so, is the	ere an obv	vious current?				
			<del>-</del>		Г				
Substrate:									
0/ 0 111	In/ 0 1		lo/ 0 1		lo/ 0'''				
% Cobble	% Gravel		% Sand		% Silt				
0/ Mud/Olav	IO/ Dadraal		٦						
% Mud/Clay	% Bedrock	(	_						
Aquatic Vegetation:	(Note amo	unt of yogo	tation or a	aal arow	th at the acc	occment cital			
Aquatic vegetation.	(Note anio	unt or vege	tation or a	gai giow	ui at tile asse	essinent site)			
Water Characteristic	·e								
Water Onaraoteristic	.5								
Odor	Sewage	Musky	Chemical	None	Other				
- G G G G	Jonago	Money	Shormoul	. 10.10	J.101				
Color	Clear	Green	Gray	Milky	Other				
00101	Jioui	3,0011	Jiay	·viiiity	J.1101				
Bottom Deposit	Sludge	Solids	Fine Sed.	None	Other				
Dottom Doposit	Jidago	Jonas	i iiio oca.	140110					
Surface Deposit	Oil	Scum	Foam	None	Other				
Carrace Deposit	OII	Journ	i Jaili	140116	Julion				

4

WBID#

136

Site #

### Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth) (Median Depth Shown in Bold)

Site #1 Mark # 31 0136\_Reese Fork\_Boone

	Depth (m)		Depth (m)	_	Depth (m)
Transect 1	0.10	Transect 5	0.20	Transect 9	0.00
Substrate:	0.30	Substrate:	0.45	Substrate:	0.10
Gravel	0.55	sand	0.60	gravely sand	0.15
Water Clarity:	0.65	Water Clarity:	1.00	Water Clarity:	0.15
none	0.80	clear	1.00	clear	0.15
Channel Feature:	0.90	Channel Feature:	1.00	Channel Feature:	0.15
pool	0.80	pool	0.95	pool	0.20
Channel Width:	0.75	Channel Width:	0.50	Channel Width:	0.10
9 yards	0.55	10 yards	0.50	11 yards	0.15
0.60	0.30	0.55	0.25	0.15	0.15
Transect 2	0.10	Transect 6	0.10	Transect 10	0.10
Substrate:	0.60	Substrate:	0.20	Substrate:	0.40
sand	0.85	sand	0.30	gravely sand	0.60
Water Clarity:	1.00	Water Clarity:	0.30	Water Clarity:	0.80
none	1.00	clear < .3 m	0.30	none	0.75
Channel Feature:	1.00	Channel Feature:	0.40	Channel Feature:	0.70
pool	0.65	pool	0.40	pool	0.65
Channel Width:	0.55	Channel Width:	0.35	Channel Width:	0.70
13 yards	0.35	12 yards	0.30	11 yards	0.70
0.63	0.15	0.30	0.15	0.68	0.50
Transect 3	0.10	Transect 7	0.10	Transect 11	0.10
Substrate:	0.60	Substrate:	0.25	Substrate:	0.30
sand	0.90	gravely sand	0.30	gravely sand	0.40
Water Clarity:	1.00	Water Clarity:	0.40	Water Clarity:	0.60
none	1.00	none	0.50	none	0.70
Channel Feature:	1.00	Channel Feature:	0.60	Channel Feature:	0.75
pool	0.75	pool	0.60	pool	0.70
Channel Width:	0.65	Channel Width:	0.50	Channel Width:	0.60
13 yards	0.30	11 yards	0.30	9 yards	0.50
0.70	0.10	0.35	0.15	0.55	0.30
Transect 4	0.20	Transect 8	0.10	_	_
Substrate:	0.50	Substrate:	0.20		
sand	0.65	gravely sand	0.35	Site Median	Maximum
Water Clarity:	0.75	Water Clarity:	0.30	0.48	1.00
none	0.75	clear	0.20		
Channel Feature:	0.90	Channel Feature:	0.15		
pool	0.90	pool	0.10		
Channel Width:	0.85	Channel Width:	0.10		
10 yards	0.80	12 yards	0.15		
0.78	0.80	0.15	0.05		

## Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth) (Median Depth Shown in Bold)

Site #2 Mark #33 0136\_Reese Fork\_Boone

	Depth (m)		Depth (m)	
Transect 1	0.05	Transect 5	0.10	Transect 9
Substrate:	0.03	Substrate:	0.10	Substrate:
	0.10	cobbly gravel	0.35	cobble
gravel Water Clarity:	0.03	Water Clarity:	0.45	Water Clarity:
clear	0.10	•		clear
Channel Feature:	0.00	none Channel Feature:	0.45 0.40	Channel Feature:
riffle				
	0.15	pool Channel Width:	0.40	pool Channel Width:
Channel Width:	0.15		0.35	
6 yards <b>0.10</b>	0.30 0.30	9 yards <b>0.38</b>	0.20 0.10	5 yards <b>0.13</b>
				_
Transect 2	0.00	Transect 6	0.05	Transect 10
Substrate:	0.00	Substrate:	0.10	Substrate:
gravel	0.05	gravel	0.20	cobble
Water Clarity:	0.05	Water Clarity:	0.30	Water Clarity:
clear	0.05	none	0.45	clear
Channel Feature:	0.05	Channel Feature:	0.50	Channel Feature:
riffle	0.05	pool	0.45	pool
Channel Width:	0.10	Channel Width:	0.50	Channel Width:
8 yards	0.05	7 yards	0.45	6 yards
0.05	0.05	0.38	0.15	0.10
Transect 3	0.20	Transect 7	0.00	Transect 11
Substrate:	0.30	Substrate:	0.10	Substrate:
gravel	0.30	cobbly gravel	0.25	cobble
Water Clarity:	0.30	Water Clarity:	0.35	Water Clarity:
none	0.30	clear	0.40	clear
Channel Feature:	0.30	Channel Feature:	0.40	Channel Feature:
pool	0.30	pool	0.30	pool
Channel Width:	0.20	Channel Width:	0.30	Channel Width:
8 yards	0.15	7 yards	0.15	5 yards
0.30	0.05	0.28	0.05	0.20
Transect 4	0.25	Transect 8	0.05	<u>-</u>
Substrate:	0.25	Substrate:	0.20	Site Median Si
gravel	0.30	bedrock, gravel	0.40	0.20
Water Clarity:	0.30	Water Clarity:	0.50	
none	0.40	none	0.50	
Channel Feature:	0.40	Channel Feature:	0.50	
pool	0.40	pool	0.45	
Channel Width:	0.45	Channel Width:	0.30	
8 yards	0.43		0.30	
o yaius	0.40	o yalus	0.30	

0.40

-	Depth (m)
Transect 9	0.05
Substrate:	0.20
cobble	0.15
Water Clarity:	0.20
clear	0.15
Channel Feature:	0.20
pool	0.10
Channel Width:	0.10
5 yards	0.05
0.13	0.05
Transect 10	0.00
Substrate:	0.05
cobble	0.10
Water Clarity:	0.10
clear	0.20
Channel Feature:	0.10
pool	0.40
Channel Width:	0.20
6 yards	0.20
0.10	0.10
Transect 11	0.05
Substrate:	0.20
cobble	0.30
Water Clarity:	0.40
clear	0.30
Channel Feature:	0.15
pool	0.30
Channel Width:	0.20
5 yards	0.00
0.20	0.00

Site Maximum 0.50

0.10

# Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth) (Median Depth Shown in Bold)

Site # 3 Mark # 34 0136\_Reese Fork\_Boone

_	Depth (m)		Depth (m)
Transect 1	0.05	Transect 5	0.20
Substrate:	0.05	Substrate:	0.40
gravel	0.05	gravel	0.40
Water Clarity:	0.10	Water Clarity:	0.35
half clear	0.10	half clear	0.30
Channel Feature:	0.10	Channel Feature:	0.30
riffle	0.10	pool	0.30
Channel Width:	0.15	Channel Width:	0.15
5 yards	0.15	12 yards	0.05
0.10	0.15	0.30	0.00
Transect 2	0.00	Transect 6	0.05
Substrate:	0.10	Substrate:	0.40
gravel	0.10	gravel	0.45
Water Clarity:	0.10	Water Clarity:	0.20
half clear	0.10	half clear	0.20
Channel Feature:	0.10	Channel Feature:	0.25
riffle	0.10	pool	0.40
Channel Width:	0.15	Channel Width:	0.40
5 yards	0.10	8 yards	0.45
0.10	0.10	0.33	0.20
Transect 3	0.05	Transect 7	0.00
Substrate:	0.15	Substrate:	0.10
gravel	0.20	gravel	0.20
Water Clarity:	0.50	Water Clarity:	0.20
half clear	0.20	half clear	0.15
Channel Feature:	0.15	Channel Feature:	0.25
riffle	0.10	pool	0.20
Channel Width:	0.10	Channel Width:	0.15
7 yards	0.10	6 yards	0.10
0.13	0.05	0.15	0.10
Transect 4	0.20	Transect 8	0.05
Substrate:	0.10	Substrate:	0.10
gravel	0.10	gravel	0.15
Water Clarity:	0.20	Water Clarity:	0.15
half clear	0.20	clear	0.15
Channel Feature:	0.20	Channel Feature:	0.10
pool	0.20	pool	0.10
Channel Width:	0.15	Channel Width:	0.00
12 yards	0.10	8 yards	0.00
0.18	0.05	0.10	0.10

	Depth (m)
Transect 9	0.00
Substrate:	0.15
gravel	0.20
Water Clarity:	0.20
half clear	0.20
Channel Feature:	0.25
pool	0.30
Channel Width:	0.35
7 yards	0.40
0.23	0.30
Transect 10	0.00
Substrate:	0.05
gravel	0.10
Water Clarity:	0.15
half clear	0.30
Channel Feature:	0.30
pool	0.20
Channel Width:	0.15
7 yards	0.05
0.13	0.05
Transect 11	0.05
Substrate:	0.20
gravel	0.30
Water Clarity:	0.40
half clear	0.30
Channel Feature:	0.35
pool	0.30
Channel Width:	0.25
8 yards	0.20
0.28	0.10

Site Median Site Maximum 0.15 0.50

# Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth) (Median Depth Shown in Bold)

Site # 4 Mark # 35 ABOVE BASE FLOW 0136\_Reese Fork\_Boone

-	Depth (m)	-	Depth (m)		Depth (m)
Transect 1		Transect 5		Transect 9	
Substrate:		Substrate:		Substrate:	
Water Clarity:		Water Clarity:		Water Clarity:	
Channel Feature:		Channel Feature:		Channel Feature:	
Channel Width:		Channel Width:		Channel Width:	
#NUM!		#NUM!		#NUM!	
Transect 2		Transect 6		Transect 10	
Substrate:		Substrate:		Substrate:	
Water Clarity:		Water Clarity:		Water Clarity:	
Channel Feature:		Channel Feature:		Channel Feature:	
Channel Width:		Channel Width:		Channel Width:	
#NUM!		#NUM!		#NUM!	
Transect 3		Transect 7		Transect 11	
Substrate:		Substrate:		Substrate:	
Water Clarity:		Water Clarity:		Water Clarity:	
Channel Feature:		Channel Feature:		Channel Feature:	
Channel Width:		Channel Width:		Channel Width:	
#NUM!		#NUM!		#NUM!	
Transect 4		Transect 8			
Substrate:		Substrate:			
Water Clarity:		Water Clarity:			
Channel Feature:		Channel Feature:			
Channel Width:		Channel Width:			
#NUM!		#NUM!			

### WBID# 0136 Reese Fork



Site# 1 Photo ID# 17, Upstream



Site# 1 Photo ID# 19, Foot paths/prints



Site# 1 Photo ID# 18, Downstream



Site# 2 Photo ID# 20, Roads

### WBID# 0136 Reese Fork



Site# 2 Photo ID# 21, No trespass sign



Site# 2 Photo ID# 23, Downstream



Site# 2 Photo ID# 22, Upstream



Site# 3 Photo ID# 24, RV/ATV Tracks

## WBID# 0136 Reese Fork



Site# 3 Photo ID# 25, Upstream



Site# 3 Photo ID# 26, Downstream

#### RE: Questions on another UAA - Anne Peery/WPCP/DEQ/MODNR



"Gilisa Gould" <ggould@ses-corp.com> 03/31/2008 04:35 PM

To "Anne Peery" <anne.peery@dnr.mo.gov>

bcc

Subject RE: Questions on another UAA

#### WBID #136 Reese Fork

Site #4 was found to be above base level based on the observation of amount of vegetation in the channel that was covered by water. This site was not revisited due to the work needing to be turned in by June 1, 2007. All other sites at WBID #136 were not above base flow. Site #4 could have been above base flow due to the location of a confluence with Saling and Big Creeks.

#### WBID #140 Youngs Creek

Site #6 was found to be above base level based on the observation of amount of vegetation in the channel that was covered by water. This site was not revisited due to the work needing to be turned in by June 1, 2007. All other sites at WBID #140 were not above base flow. Site #6 could have been above base flow due to it being the most downstream.

#### Have a good day!

Gilisa Gould SES, Inc., Merriam, KS 913.307.0046 Ext. 19 800.897.1163 ggould@ses-corp.com

**From:** Anne Peery [mailto:anne.peery@dnr.mo.gov]

Sent: Monday, March 31, 2008 3:29 PM

To: Gilisa Gould

Subject: RE: Questions on another UAA

#### Gilisa,

It is my fault if I didn't mention that we are planning to stop reviewing UAAs today (3/31) so we can get the rest of the work done needed to do a rulemaking in time to meet our deadlines. The information I still need is for Reese Fork (136), Young's Creek (140) and Dick's Fork (3197). Without your information, these may have to wait for the next rulemaking (in a year or two).

Thanks,

Anne Peery
Total Maximum Daily Load (TMDL) Developer
Missouri Department of Natural Resources
Water Protection Program
573-526-1426
anne.peery@dnr.mo.gov

#### RE: Questions on another UAA - Anne Peery/WPCP/DEQ/MODNR

"Gilisa Gould" <ggould@ses-corp.com>

03/26/2008 05:03 PM

To"'Anne Peery" <anne.peery@dnr.mo.gov> cc

SubjectRE: Questions on another UAA

Hello, had to stop studying and come in the office to do some "real" work ©

So, WBID 899: yes, it was at base flow based on seeing the water level below vegetation on the banks. I do not know how I came up with the 4.65" for precipitation, because I just now went through the last 10 days and came up with .48" which is closer to your suggested .50".

The pipe at site#4 is mentioned under photos as #36 "water pipe south side of creek". If we can tell where it's coming from, we mention that, but most of these pipes are coming to the creek below ground and tracing is difficult. There is another pipe mentioned (#57) for this water body, but it's source is unknown as well.

Let me know if this answers everything.

## Have a good day!

Gilisa Gould SES, Inc., Merriam, KS 913.307.0046 Ext. 19 800.897.1163 ggould@ses-corp.com

**From:** Anne Peery [mailto:anne.peery@dnr.mo.gov]

Sent: Wednesday, March 26, 2008 3:47 PM

To: ggould@ses-corp.com

Subject: Questions on another UAA

Hello, Gilisa!

I hope your studies are going well.

Questions about Salt Fork, this time (WBID 899).

#### RE: Questions on another UAA - Anne Peery/WPCP/DEQ/MODNR

Since Data Sheet B states it rained 4.65 inches in the last 10 days, we are wondering if the creek was at baseflow. In checking weather at Whiteman AFB, the rainfall data was 0.5" 10/22/07, and none on the 21st and 20th.

Also, one of the pictures at site #4 shows a pipe discharging a copper colored liquid. It was not referred to in any notes. Does SES have any idea about the origin?

Thanks,

Anne Peery Total Maximum Daily Load (TMDL) Developer Missouri Department of Natural Resources Water Protection Program 573-526-1426 anne.peery@dnr.mo.gov